

INNOVATIONS IN CALIFORNIA *TRIFOLIUM*  
AND *LATHYRUS*

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ABSTRACT

This report includes: *Trifolium buckwestiorum*, sp. nov., and taxonomic discussion about California *Lathyrus lanszwertii*, *L. nevadensis*, and *L. vestitus*. Nomenclatural transactions include the combinations: *L. lanszwertii* var. *tracyi*, and *L. vestitus* vars. *ochropetalus* and *alefeldii*.

Certain of the Leguminosae (Fabaceae) for the Jepson Manual Project require the following nomenclatural transactions.

***Trifolium buckwestiorum*** Isely, sp. nov. (Fig. 1). — TYPE: USA, California, Santa Cruz Co., Scott Creek watershed, along old roadbed which goes from "Purdy Aluminum Barn" down into "Betencourt Gulch," 1 Jun 1983, *West 107* (holotype, JEPS).

Est herba annua, involucreta, glabra; foliolis obovatis vel ellipticis; inflorescentiis inferioribus 2–5 flores cleistogamos a stipulis inclusis gerentibus, involucre carentibus; illis superioribus excertis 10–15+ flores chasmogamos ferentibus, involucre crateriformio subtentis; calycis lobis deltatis seta terminali 1–1.5 mm longa, etiam 2–3 apiculationibus lateralibus in quoque lato praeditis.

Annual herb, decumbent or ascending, glabrous. Stems usually abundantly branched at base, 0.5–4 cm long. Leaves cauline, the lower well-petioled, upper shortly petioled to sessile; leaflets obovate or elliptic, 0.5–1.5 cm long, apically rounded or slightly notched, inconspicuously spinulose-dentate. Stipules shallowly lacerate, the divisions bristle-tipped. First-formed heads (from medial and lower stems) sessile and enclosed by stipules, with 2–5 cleistogamous flowers, lacking involucre. Subsequent heads peduncled, capitate, 5–10 mm diam., involucreta, bearing 10–15 ascending flowers; involucre bowl-shaped, dissected  $\times 0.2(-0.4)$  of height, the numerous divisions with short bristle-tips. Calyx 4–5 mm long, glabrous; lobes shorter than tube, deltate with 2–3 lateral apiculations on each side and a short terminal bristle tip, 1–1.5 mm long (Fig. 1). Corolla 6–

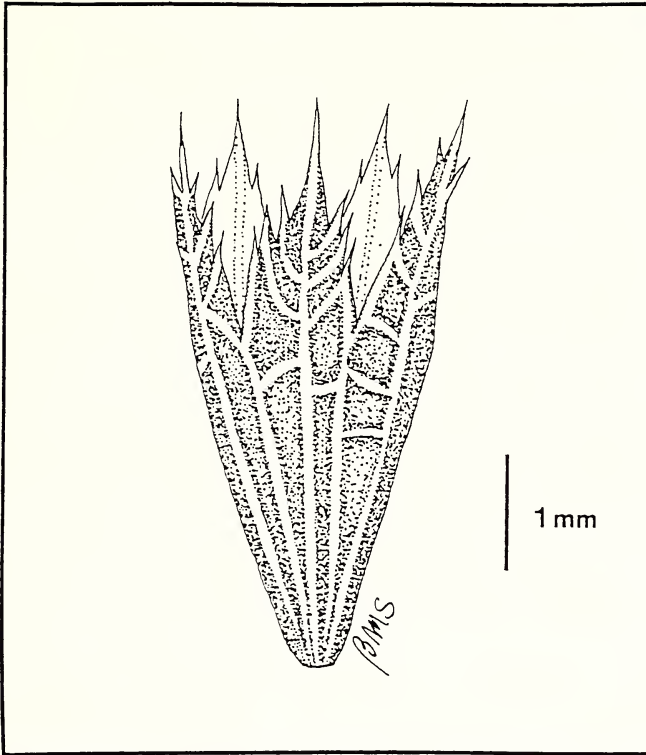


FIG. 1. Calyx from *Trifolium buckwestiorum*.

7 mm long, pale pink or white with darker keel. Legume shortly stipitate, included or slightly exserted. Seed 1.

*Exsiccata*. USA, California, Santa Cruz Co.: "Upper Pozzi Meadow," "Schoolhouse Ridge," hillside approx. 0.3 mi NE of Old Seaside School, Swanton, 20 May 1982, *Buck, West, Hawke, and Vigno 1* (CAN, JEPS). Scott Creek watershed, along old roadbed which goes from "Purdy Aluminum Barn" down into "Bettencourt Gulch," 6 May 1983, *West 73* (JEPS) (same population as type). Scott Creek watershed, lower "Schoolhouse Ridge," central portion of upper "Pozzi Meadow," 6 May 1983, *West 75* (JEPS) (same population as *Buck, West, Hawke, and Vigno 1*). H-H Ranch, SE of Greyhound Rock and W and NW of Old Seaside School, Swanton, on low ridge E of central "Old Road Gulch," on old roadbed, 13 May 1983, *Buck and West 272* (ISC, JEPS). H-H Ranch, SE of Greyhound Rock and W and NW of Old Seaside School, Swanton, S/SW-facing grassy slope comprising lower/central portion of "Old Road," 10 Jun 1983, *West 113* (JEPS, ISC) (same population as *Buck and West 272*).

Cusick meadow (NE corner), Nisene Marks State Park, near N end of Park, near summit of Santa Rosalia Mountain, ca. 2.8 km NW of Buzzard Lagoon, 11 air km NNE of Aptos, 25 May 1986, *Morgan and West 2* (JEPS).

This local, annual, involucrate clover resembles *Trifolium barbigerum* var. *barbigerum* in general aspect. It differs from that species most strikingly in its only shortly aristate, laterally toothed calyx lobes, the failure of post-anthesis inflation of the corolla, and in the production of cleistogamous flowers. Figure 1 illustrates the distinctive calyx.

*Trifolium buckwestiorum* is clearly distinctive in the United States. However, some annual, involucrate clovers of cismontane California are closely related to, or are seemingly identical with species found in western coastal Chile. A decision concerning the specific uniqueness of *T. buckwestiorum* is necessarily qualified by consideration of similar taxa from Chile.

Mélica Muñoz-Schick of the Museo Nacional de Historia Natural, Santiago, Chile (SGO), to whom I sent a fragment of the U.S. species, kindly sent me selected Chilean specimens for examination. She remarked, "The species that I am sending don't look very similar to the one you have sent." The Missouri Botanical Garden (MO) kindly loaned sheets selected by David Smith (ISC). Rupert Barneby, New York Botanical Garden (NY), compared a submitted specimen branch with their Chilean holdings. Nothing matches.

The closest resemblance in the literature to *T. buckwestiorum* is the Chilean *T. antucoensis* D. Heller, which, as illustrated by Zohary and Heller (1984, p. 536), has a similar calyx. But per description, it lacks the cleistogamous flowers. Also, the illustration shows a plant that has strongly emarginate leaflets, a conspicuously cut involucre, and a considerably longer corolla than *T. buckwestiorum*.

*Trifolium buckwestiorum* is named for its two initial collectors, Roy E. Buck and James A. West.

LATHYRUS LANSZWERTII Kellogg, Proc. Calif. Acad. Sci. 2:150. 1862.—TYPE: USA, Nevada, Washoe Co., Dismore Camp, Hunter Creek Canyon, 20–25 Jun 1907 (lectotype by Hitchcock 1952).

The California varieties of the wide ranging *L. lanszwertii* are compared as follows:

LATHYRUS LANSZWERTII var. LANSZWERTII

Plants usually trailing or climbing; leaflets commonly narrowly elliptic to oblong-lanceolate, to 1.2 cm wide; tendrils well developed and branched; corolla pale lavender to purple, 12–15 mm long. Northeast California (Modoc Co.); Sierra Nevada south to ca. Tu-



- N.W. Amer. 1:158. 1898.—TYPE: USA, Oregon, at Glendale [Douglas Co.] (holotype, OSC).
- Lathyrus nevadensis* var. *nuttallii* (S. Watson) C. Hitchc., Univ. Wash. Publ. Biol. 15:45. 1952.—*L. nuttallii* S. Watson, Proc. Amer. Acad. Arts Sci. 21:450. 1886—TYPE: USA, "Upper California," *Nuttall s.n.* (holotype, UC).
- Lathyrus nevadensis* var. *puniceus* C. Hitchc., Univ. Wash. Publ. Biol. 15:46. 1952.—TYPE: USA, Washington, Chelan Co., 21 May 1949, *C. L. Hitchcock 18973* (holotype, WTU).
- Lathyrus nevadensis* var. *pilosellus* (Peck) C. Hitchc., Univ. Wash. Publ. Biol. 17(3):285. 1961.—*L. ridigus* var. *pilosellus* Peck, *Torreyia* 28:55. 1928—TYPE: USA, Oregon, Lane Co., summit of Horse Mt., 11 mi SE of McKenzie, *Peck 7869* (holotype, WTU).

Hitchcock's subsp. *nevadensis* has reduced tendrils and large flowers, often to 20 mm, while subsp. *lanceolatus* ideally is characterized by evident tendrils and smaller flowers, less than 20 mm long. The two forms are sympatric in the Sierra Nevada and southern Cascades, the *lanceolatus* kind predominating northward in Oregon and the *nevadensis* type southward. However, they form a continuum. Even though Hitchcock (1952) gave them taxonomic status he remarked (p. 43), "Much of the material in herbaria is of an intermediate nature and extensive field observation indicates that the two types of plants interbreed freely."

Hitchcock's vars. *nuttallii*, *puniceus*, and *pilosellus*, cited above, are all regional minor flower color variants.

- LATHYRUS NEVADENSIS var. PARKERI (H. St. John) C. Hitchc., Univ. Wash. Publ. Biol. 15:45. 1952.—*L. parkeri* St. John, Fl. Southeast. Washington and adjacent Idaho, p. 223. 1937.—*L. nevadensis* subsp. *lanceolatus* var. *parkeri* (St. John) C. Hitchc., Univ. Wash. Publ. Biol. 15:45. 1952. TYPE: USA, Idaho, Latah Co., Grizzly Camp, *Parker 511* (holotype, WS).
- Lathyrus cusickii* S. Watson, Proc. Amer. Acad. Arts Sci. 17:371. 1882.—*L. nevadensis* subsp. *cusickii* (S. Watson) C. Hitchc., Univ. Wash. Publ. Biol. 15:44. 1952.—TYPE: USA, Oregon, Union Co., dry mountain slopes, *Cusick s.n.* (holotype, presumably GH).

Var. *parkeri* differs from var. *nevadensis* regionally and morphologically as given in the key above. It is the ssp. *cusickii* of prior authors, which sadly must be replaced by the varietal epithet *parkeri*. Var. *parkeri*, sensu Hitchcock (1952) represents local Idaho populations in which the "banner [is] white, at most pinkish lined" (Hitchcock 1952, p. 45).

*LATHYRUS VESTITUS* Nutt. in Torrey & A. Gray, Fl. N. Amer. 1:276. 1838.—TYPE: USA, Columbia Plains near the sea, *Nuttall s.n.* (holotype, BM) (the type probably collected near Monterey, California [Hitchcock 1952]).

See varietal headings for pertinent synonymy and typification. Complete synonymy is provided by Broich (1987).

*Lathyrus vestitus* represents a complex that extends as a narrow band west of the Sierra Nevada and the Cascades almost the entire Pacific coast region of the United States. It includes numerous genetic-ecological forms that have been variously interpreted. Broich (1987) employed phenetic, taximetric analysis to revise the group. I recognize three varieties as in the following key.

- a. Flowers dark purple-red to "wine red," 16–20 mm; standard recurved to 120°; southern California, Los Angeles Co., south to San Diego Co., also Santa Catalina Island. . . . . var. *alefeldii*
- a'. Flowers various shades of lavender to purple, blue-purple, pink, or white, 14–18 mm; standard reflexed to ca. 90°; Washington to southern California (Los Angeles Co.; intermediates with var. *alefeldii* may extend further south).
  - b. Washington to northern California (Del Norte and Humboldt cos.); plants glabrous or glabrate; flowers usually white. . . . . var. *ochropetalus*
  - b'. Northern California (Humboldt Co.) to southern California (Los Angeles and southwest San Bernardino cos.); plants usually pubescent, but sporadically glabrous, especially adjacent to coast and inland in San Luis Obispo Co.; flowers rarely white. . . . . var. *vestitus*

*LATHYRUS VESTITUS* Nutt. var. *VESTITUS*

*Lathyrus polyphyllus* var. *insecundus* Jepson, Manual Fl. Pl. Calif. 582. 1925.—TYPE: USA, California, Marin Co., Olema, 28 Mar 1897, *Jepson 13644* (holotype, JEPS).

*Lathyrus vestitus* subsp. *bolanderi* (S. Watson) C. Hitchc., Univ. Wash. Publ. Biol. 15:19. 1952.—*L. bolanderi* S. Watson, Proc. Amer. Acad. Arts Sci. 20:363. 1885.—TYPE: USA, California, Oakland, thickets, creek banks, *Bolander 337* (holotype, GH).

*Lathyrus vestitus* subsp. *laetiflorus* (E. Greene) Broich, Syst. Bot. 12: 151. 1987.—*L. laetiflorus* E. Greene, Erythea 1:105. 1893.—TYPE: USA, California, seeds from Los Angeles, cultivated at Berkeley, May 1903 (holotype, UC).

*Lathyrus vestitus* subsp. *laeivarpus* Broich, Syst. Bot. 12:151. 1987.—TYPE: USA, California, Ventura Co., 2 Jun 1952, *C. L. Hitchcock 19573* (holotype, WTU).

Var. *vestitus*, broadly defined, is diverse in habit (short and erect to viny), leaflet proportions, flower size and color, pubescence, and the glandular condition of the ovary. There is a gradual trend, north to south of greater flower size, which culminates in var. *alefeldii*.

Amidst the plethora of local variation incumbent in *L. vestitus*, Broich's (1987) data provide two "modes" from Santa Barbara to

Los Angeles and western San Bernardino cos., California. These document subspp. *laevicarpus* and *laetiflorus*, which are distinguished from each other and var. *vestitus* on the basis of the presence or not of ovary pubescence and length of the style. These taxa possibly or probably have nomenclatural merit, but I include them under the umbrella var. *vestitus* for two reasons: (1) I have had difficulty identifying material and relating it to the assigned ranges of the taxa, and (2) the listing of categories such as these are discouraged for the purposes of the Jepson Manual: e.g., "keys and descriptions should emphasize features visible with little or no magnification" (Jepson Manual Project, undated, p. 4). The serious student of California *Lathyrus* should of course consult Broich's paper (1987).

**Lathyrus vestitus** var. **alefeldii** (T. White) Isely, comb. nov.—*L. alefeldii* T. White, Bull. Torrey Bot. Club 21:449. 1894.—*L. laetiflorus alefeldii* (T. White) Bradshaw, Bot. Gaz. 80:261. 1925 (rank not given).—*L. laetiflorus* var. *alefeldii* (T. White) Jepson, Fl. Calif. 2:391. 1936.—*L. laetiflorus* subsp. *alefeldii* (T. White) C. Hitchc., Univ. Wash. Publ. Biol. 15:23. 1952 (attributed to Bradshaw).—*L. vestitus* (T. White) subsp. *alefeldii* Broich, Syst. Bot. 12:151. 1987.—TYPE: USA, California, San Diego, May 1852, *Thurber 524* (holotype, NY).

**Lathyrus vestitus** var. **ochropetalus** (Piper) Isely, comb. nov.—*L. ochropetalus* Piper, Proc. Biol. Soc. Wash. 31:189. 1918.—*L. vestitus* subsp. *ochropetalus* (Piper) C. Hitchc., Univ. Wash. Publ. Biol. 15:19. 1952.—TYPE: USA, Washington, Seattle, Jun 1918, *C. N. Piper 482* (holotype, NY).

*L. peckii* Piper, Proc. Biol. Soc. Wash. 31:190. 1918.—TYPE: USA, Oregon, Curry Co., Harbor, 31 Jul 1913, *M. E. Peck 4008* (holotype, WS).

As given in the above key, vars. *vestitus* and *ochropetalus* differ from one another in the usual association of both flower color and pubescence. By these criteria, var. *ochropetalus* extends from central Washington only to northern California, not to middle California as treated by prior authors.

This correlation fails to the degree that pubescence is a quantitative character. Glabrate extremes within the range of variety *vestitus* are most conspicuous contiguous to the coast where they have been called variety or subspecies *bolanderi*. Broich (1987, pp. 147–148) suggested that the glabrate condition reflects a coastal mesophytic habitat contrasting with the drier conditions of the chaparral to which the pubescent kinds are exposed. Be that as it may, it seems likely that glabrate plants or populations up to 250 miles distant from the primary range of the white-flowered, consistently glabrous var. *ochropetalus* are more closely related to the contiguous pubes-

cent var. *vestitus* with which they share flower color. I have therefore referred them to var. *vestitus*. They include *L. bolanderi* and its nomenclatural derivatives that then become taxonomic synonyms of var. *vestitus*. Hence a new designation (i.e., var. *ochropetalus*) is needed for the northern phase of the species.

#### ACKNOWLEDGMENTS

I thank those who helped me with *Trifolium buckwestiorum*: Mélica Muñoz-Schick (SGO), for loan of specimens; Dr. Rupert Barneby (NY), who searched the South American holdings of that herbarium; and David Smith (ISC), who did likewise at the Missouri Botanical Garden. Roy Buck (JEPS) rechecked the Exsiccata citations and Earl Bishop wrote the Latin for *Trifolium buckwestiorum*. The figure was prepared by Beatriz Spalding.

Deborah Lewis, Patrick Herendeen, and Steve Broich read the manuscript and offered suggestions. My appreciation!

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(Received 30 Apr 1991; revision accepted 3 Oct 1991.)